Abstract

Previously known methods of depositing a single material component especially in the nanometer range use an electric field between the probe tip of a microscope and the substrate, into which a precursor gas that is provided with a chemical compound containing said material component is introduced. The chemical compound is split under the effect of the field and the material component is released, said material component subsequently depositing on the substrate in the narrowly limited area located below the probe tip. The inventive method simultaneously or sequentially uses several precursor gases (PG), each of which is provided with a different chemical compound (DMCd, DETe) containing a different material component (Cd, Te) in a gas mixture having an adjustable mixing ratio. The material components (Cd. Te) eliminated from the different, split chemical compounds (DMCd, DETe) form a common chemical compound (CdTe) being deposited on the substrate (S), allowing compound materials, especially also compound semiconductors, containing different material components to be deposited in a parameter-controlled manner at modifiable concentrations. Advantageously, a semiconductor component comprising photo diodes or light emitting diodes can be composed of nano-dots which are provided with different spectral band gaps and are deposited in a nano-structured manner.